

AMENDMENTS TO THE CLAIMS

67 \ 1. (*currently amended*) A cover gas composition adapted for
[protecting] the protection of molten magnesium/magnesium alloy, the
composition including a fluorine containing inhibiting agent and a carrier gas,
wherein each component of the composition has a Global Warming Potential
s (GWP) (referenced to the absolute GWP for carbon dioxide at a time horizon
of 100 years) of less than 5000.

2. (*original*) A composition as claimed in claim 1 wherein the
inhibiting agent has no ozone depletion potential.

3. (*previously presented*) A composition as claimed in claim 1
wherein the carrier gas is selected from the group consisting of air, carbon
dioxide, argon, nitrogen and mixtures thereof.

4. (*previously presented*) A composition as claimed in claim 1,
wherein each component of the composition has GWP of less than 3000.

5. *(currently amended)* A cover gas composition [~~as claimed in claim 1~~] adapted for the protection of molten magnesium/magnesium alloy, the composition including a fluorine containing [~~wherein the~~] inhibiting agent [is] selected from the group consisting of hydrofluorocarbons, hydrofluoroethers and mixtures thereof, and a carrier gas, wherein each component of the composition has a Global Warming Potential (GWP) (referenced to the absolute GWP for carbon dioxide at a time horizon of 100 years) of less than 5000.

6. *(previously presented)* A composition as claimed in claim 1 wherein the inhibiting agent has a boiling point of less than 100°C.

7. *(previously presented)* A composition as claimed in claim 1 wherein the inhibiting agent is selected from the group consisting of difluoromethane, pentafluoroethane, 1, 1, 1, 2-tetrafluoroethane, difluoroethane, heptafluoropropane, methoxy-nonafluorobutane, ethoxy-nonafluorobutane, dihydrodecafluoropentane and mixtures thereof.

8. *(previously presented)* A composition as claimed in claim 4 wherein each component of the composition has a GWP of less than 1500.

9. *(previously presented)* A composition as claimed in claim 7 wherein the inhibiting agent is 1, 1, 1, 2-tetrafluoroethane and the carrier gas is dry air.

10. *(currently amended)* A cover gas composition [as claimed in claim 1] adapted for the protection of molten magnesium/magnesium alloy, the composition including a fluorine containing inhibiting agent that is less than 1% by volume [inhibiting agent] of the composition, and a carrier gas, wherein each component of the composition has a Global Warming Potential (GWP) (referenced to the absolute GWP for carbon dioxide at a time horizon of 100 years) of less than 5000.

11. *(original)* A composition as claimed in claim 10 containing less than 0.5% by volume inhibiting agent.

12. *(original)* A composition as claimed in claim 11 containing less than 0.1% by volume inhibiting agent.

13. *(cancelled)*

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14. *(withdrawn)* A method of protecting molten magnesium/magnesium alloy, the method including blanketing the magnesium/magnesium alloy with a cover gas composition as claimed in claim 1.

15. (*withdrawn*) Use of an inhibiting agent as claimed in claim 7 for preventing or minimizing oxidation of molten magnesium/magnesium alloy.

16. (*cancelled*)

17. (*new*) A method for treating molten magnesium/magnesium alloy to protect said molten magnesium/magnesium alloy from reacting with oxygen in air which comprises: providing molten magnesium/magnesium alloy and exposing said molten magnesium/magnesium alloy to a gaseous mixture comprising a fluorine containing inhibiting agent selected from the group consisting of hydrofluorocarbons, hydrofluoroethers, and mixtures thereof.

18. (*new*) A method as claimed in claim 17 wherein the fluorine containing inhibiting agent is a hydrofluorocarbon.

19. (*new*) A method as claimed in claim 18 wherein said hydrofluorocarbon is selected from the group consisting of difluoromethane, pentafluoroethane, 1, 1, 1, 2-tetrafluoroethane, difluoroethane, heptafluoropropane, dihydrodecafluoropentane and mixtures thereof.

20. (*new*) A method as claimed in claim 18 wherein said hydrofluorocarbon is 1, 1, 1, 2-tetrafluoroethane.

21. (new) A method as claimed in claim 17 wherein said fluorine containing inhibiting agent is a hydrofluoroether.

22. (new) A method as claimed in claim 21 wherein said hydrofluoroether is selected from the group consisting of methoxynonafluorobutane, ethoxynonafluorobutane, and mixtures thereof.

23. (new) A method as claimed in claim 17 wherein the gaseous mixture further comprises a carrier gas.

24. (new) A method as claimed in claim 23 wherein said carrier gas is selected from the group consisting of air, CO₂, argon, nitrogen, and mixtures thereof.

25. (new) A method for protecting an exposed surface of molten magnesium/magnesium alloy from reacting with oxygen in air, comprising: .

(a) providing molten magnesium/magnesium alloy;

5 (b) contacting said molten magnesium/magnesium alloy with a gaseous mixture comprising a fluorine containing inhibiting agent selected from the group consisting of hydrofluorocarbons, hydrofluoroethers, and mixtures thereof; and

10 (c) forming a protective film/layer on the surface of said molten magnesium/magnesium alloy.

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26. (new) A method as claimed in claim 25 wherein the gaseous mixture further comprises a carrier gas.

27. (new) A method as claimed in claim 26 wherein said carrier gas is selected from the group consisting of air, CO₂, argon, nitrogen, and mixtures thereof.

28. (new) A method as claimed in claim 25 wherein the fluorine containing inhibiting agent is a hydrofluorocarbon.

29. (new) A method as claimed in claim 28 wherein said hydrofluorocarbon is selected from the group consisting of difluoromethane, pentafluoroethane, 1, 1, 1, 2-tetrafluoroethane, difluoroethane, heptafluoropropane, dihydrodecafluoropentane and mixtures thereof.

30. (new) A method as claimed in claim 28 wherein said hydrofluorocarbon is 1, 1, 1, 2-tetrafluoroethane.

31. (new) A method as claimed in claim 28 wherein said fluorine containing inhibiting agent is a hydrofluoroether.

32. (new) A method as claimed in claim 25 wherein said hydrofluoroether is selected from the group consisting of methoxynonafluorobutane, ethoxynonafluorobutane, and mixtures thereof.

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33. (*new*) A composition as claimed in claim 7, wherein the inhibiting agent is 1, 1, 1, 2-tetrafluoroethane and the carrier gas is selected from the group consisting of nitrogen, carbon dioxide and mixtures thereof.

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